

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SHIGEYUKI SASAKI, TADAKATSU NAKAJIMA,
NORIYUKI ASHIWAKE, YASUO OHSONE, TOSHIO HATADA,
TOSHIKI IINO, AKIO IDEI and KENICHI KASAI

Appeal No. 96-0274
Application No. 08/103,227¹

ON BRIEF

Before Thomas, Martin and Carmichael, Administrative Patent Judges.

Carmichael, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-20, which constitute all the claims remaining in the application.

¹ Application for patent filed August 9, 1993.

Appeal No. 96-0274
Application No. 08/103,227

Claim 19 reads as follows:

19. A liquid-cooled electronic device comprising:

at least one semiconductor device mounted on a substrate;

a cooling medium supply member for injecting a cooling medium to a back surface of said at least one semiconductor device; and

a member arranged upstream of the back surface adjacent an outlet of the cooling medium supply member and configured for interfering with a flow of said cooling medium from said cooling medium supply member to create turbulence downstream of the outlet and radial flow of said cooling medium over the back surface.

The Examiner's Answer cites the following prior art:

Azar	5,103,374	Apr.
7, 1992		
Novotny	5,206,791	Apr. 27,
1993		
Nakajima et al. (Nakajima)	5,270,572	Dec. 14,
1993		

(filed June 24, 1992)

OPINION

Claims 19-20 stand rejected under 35 U.S.C. § 102 as anticipated by Azar. Claims 1-20 stand rejected under 35 U.S.C. § 103 as unpatentable over Nakajima in view of Azar and Novotny.

Anticipation of Claims 19-20

Claims 19-20 recite a device with a member configured for radial flow of cooling medium over the back surface of a semiconductor device. Appellants argue the Azar does not anticipate the claimed subject matter because Azar is not configured for radial flow, among other things. The examiner's rejection does not address the "radial flow" limitation and the examiner's Answer does not respond to that argument. We are unable to find such radial flow upon our own inspection of Azar. We find that the examiner has not presented a ***prima facie*** case of anticipation, and we will not sustain the rejection.

Obviousness of Claims 1-20

Nakajima discloses the claimed subject matter except for the recited member, mounted adjacent the cooling medium ejection port (outlet), configured to create turbulence. The examiner first relies on Azar to suggest adding a turbulence-causing member to Nakajima, and second relies on Novotny to suggest placing such a member adjacent Nakajima's ejection port.

Appeal No. 96-0274
Application No. 08/103,227

The mere fact that the prior art may be modified in the manner suggested by the examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. ***In re Fritch***, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992). First, we agree with Appellants that Azar's teachings for a parallel-flow device do not suggest creating turbulence in Nakajima's radial-flow device. Second, we also agree with appellants that Novotny's teachings of fins 20 and heat sink 11 suggest nothing about placement of a turbulence-causing member. Novotny does not employ turbulence. Thus, the rejection will not be sustained.

CONCLUSION

The rejections of claims 1-20 are not sustained.

REVERSED

Appeal No. 96-0274
Application No. 08/103,227

James D. Thomas)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
John C. Martin)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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)	
James T. Carmichael)	
Administrative Patent Judge)	

JTC/gjh

Appeal No. 96-0274
Application No. 08/103,227

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Appeal No. 96-0271

Application No. 08/103,227

APJ Carmichael

APJ Martin

APJ Thomas

Reversed

November 9, 1999